

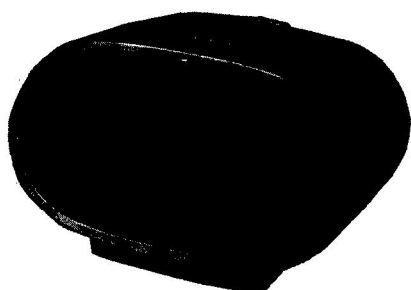
Service Manual

Speaker System with Amplifier

SB-AV30

Color

(K)... Black Type



Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	

SPECIFICATIONS

Type	Speaker system with amplifier
Speaker	10 cm cone type
Input voltage	9V/50k Ω
Frequency range	90 Hz ~ 17 kHz (−16 dB)
Power output	1 kHz, 1%, 5 W (8 Ω)
Power consumption	18 W
Power supply	
For (EB) area	AC 230–240 V, 50/60 Hz
For (E) area	AC 230 V, 50/60 Hz
Dimensions (W × H × D)	210 × 137 × 207 mm
Weight	1.6 kg

Note:

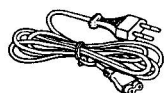
Specifications are subject to change without notice.
Weight and dimensions are approximate.

For United Kingdom only

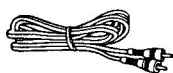
This apparatus was produced to BS 800.

Marking sign is located on bottom of the unit.

ACCESSORIES



AC power supply cord ... 1 pc.
(RJA0019-1K): (E)
(SJA193): (EB)

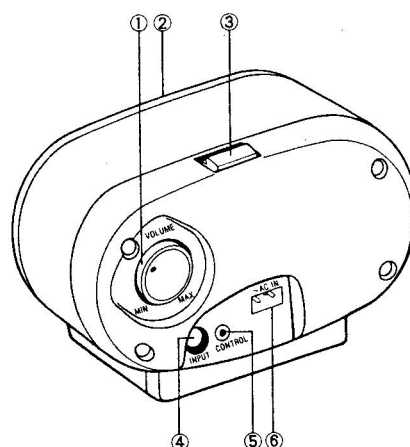


Monaural connection cable (BZ-C2457A) ... 1 pc.



L-type cable
(BZ-C2458A) ... 1 pc.

LOCATION OF CONTROLS



① Volume control (VOLUME)

② Power indicator

Illuminates when power switch is turned ON.
When the power supply of this unit and the CD system stereo are turned ON, the green indicator illuminates.
When the power supply of this unit is ON and the power of the CD system is in stand-by, the red indicator illuminates.

③ Power switch (POWER)

④ Input terminal (INPUT)

Connect to the CENTER OUT terminal of the CD system stereo.

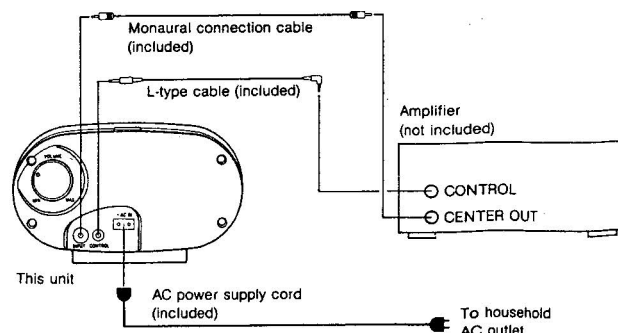
⑤ Control terminal (CONTROL)

Connect to the CONTROL terminal of the CD system stereo.

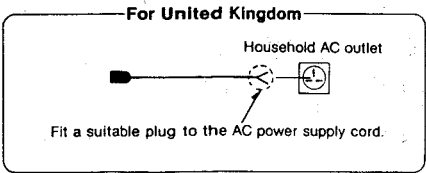
⑥ AC IN socket (~AC IN)

Connect the power supply cord.

CONNECTIONS



Technics



- Notes:**
- The power to the speaker and the auxiliary unit should always be turned off before connection.
 - When connecting to the CD System Stereo with Dolby pro-logic surround "CENTER OUT" terminal, use the L-type cable (included). The power switch of the amplifier is synchronized to control the speaker power supply.
 - When connecting to an auxiliary unit other than the CD System Stereo with Dolby pro-logic surround "CENTER OUT" terminal, do not connect the L-type cable to the control terminal.
 - The configuration of AC power supply cord differs according to area.

PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

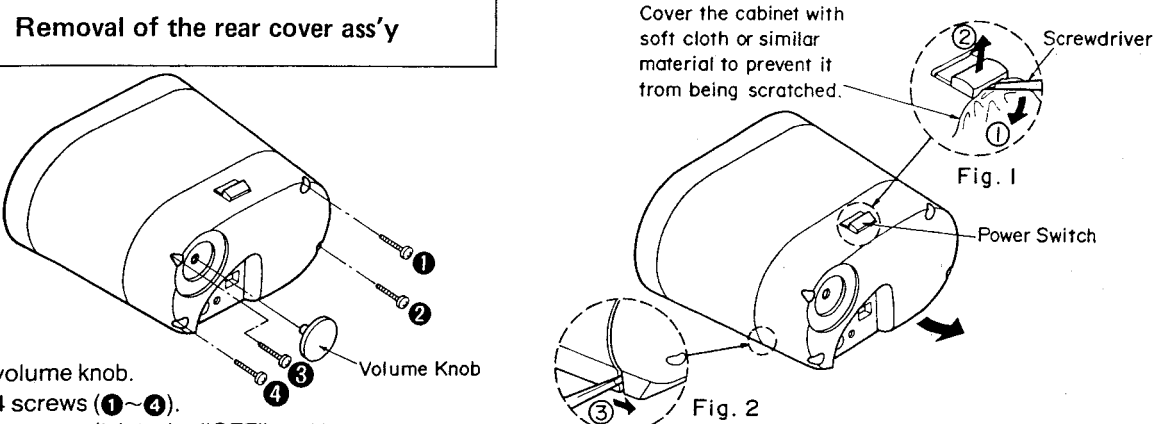
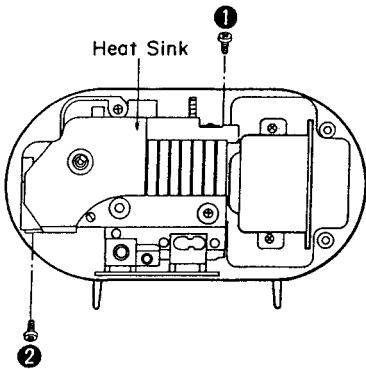
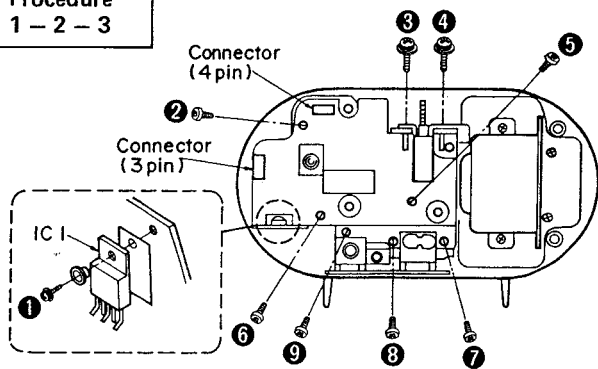
The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

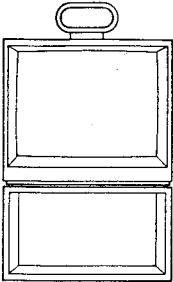
Note: When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

DISASSEMBLY INSTRUCTIONS

Ref. No. 1	Removal of the rear cover ass'y	Cover the cabinet with soft cloth or similar material to prevent it from being scratched.  1. Remove the volume knob. 2. Remove the 4 screws (1~4). 3. First, set the power switch to the "OFF" position and then remove the power switch by using a small regular screwdriver or another similar object in the order of arrow ① and arrow ② as shown in Fig. 1. 4. Remove the rear cover ass'y in the direction of arrow ③ by using a small regular screwdriver or similar object as shown in Fig. 2.	
Ref. No. 2	Removal of the heat sink	Ref. No. 3	Removal of the main P.C.B. and input P.C.B.
Procedure 1 → 2	 • Remove the 2 screws (1, 2).	Procedure 1 - 2 - 3	 ■ Removal of the main P.C.B. 1. Remove the 2 connectors. (3pin, 4pin). 2. Remove the 6 screws (1~6). ■ Removal of the Input P.C.B. • Remove the 3 screws (7~9).

PLACEMENT

- When using this unit as a Dolby pro-logic surround center speaker, place it on top of the TV, or between the two left and right speakers, as show in the illustration.



■ When placed beside a TV

Although this unit is designed to prevent color irregularity or color deviation in TV pictures, such deviation may occur, depending on the type of TV.

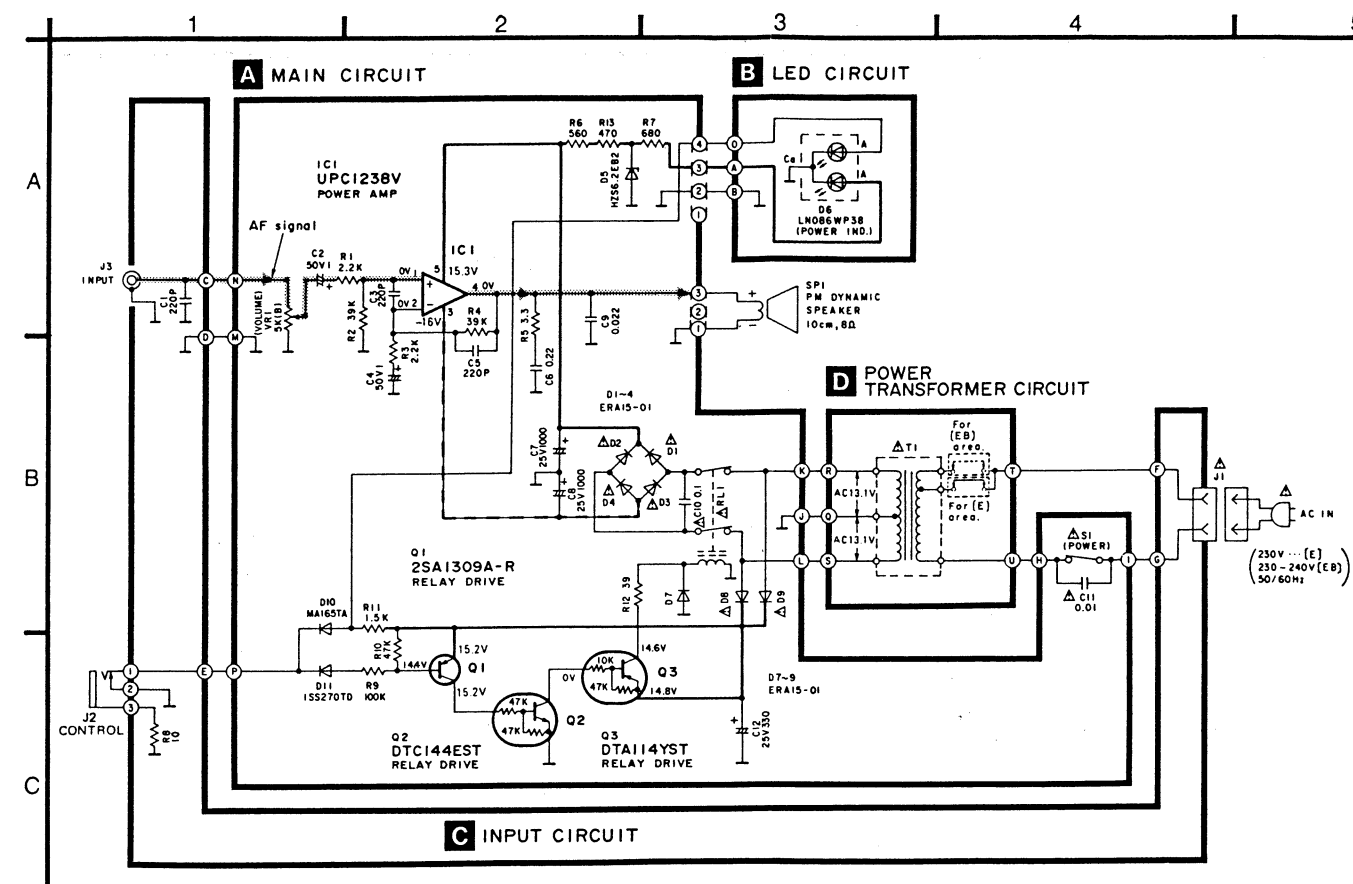
If this happens, the problem might be corrected by switching OFF the TV for 15 to 30 minutes. The TV's own self-degaussing function may clear up the problem when the TV is switched ON again.

If it does not, place the speaker at a greater distance from the TV set.

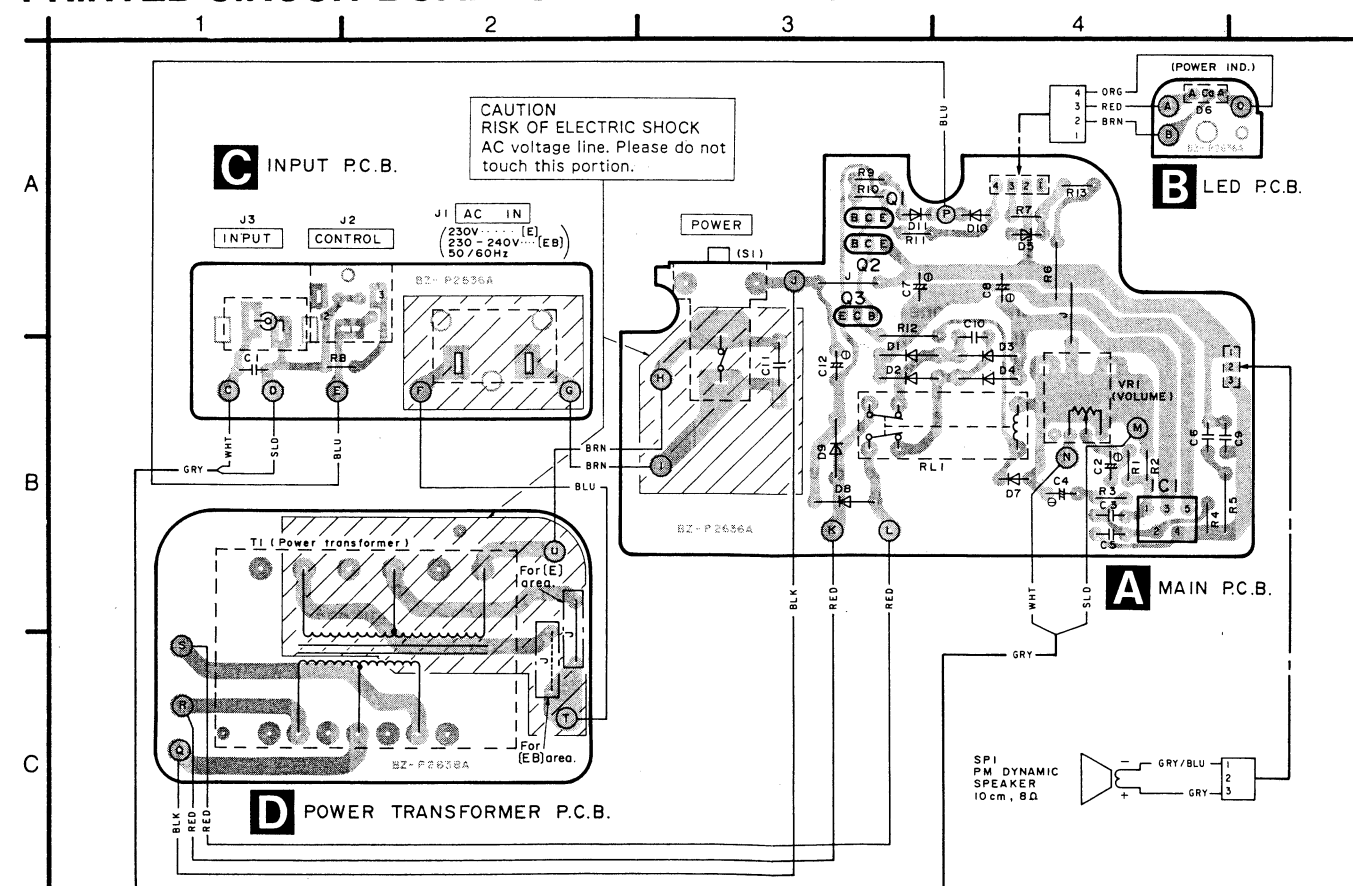
Note:

If static can be heard when a cassette deck is being used, move the speaker away from the cassette deck.

SCHEMATIC DIAGRAM

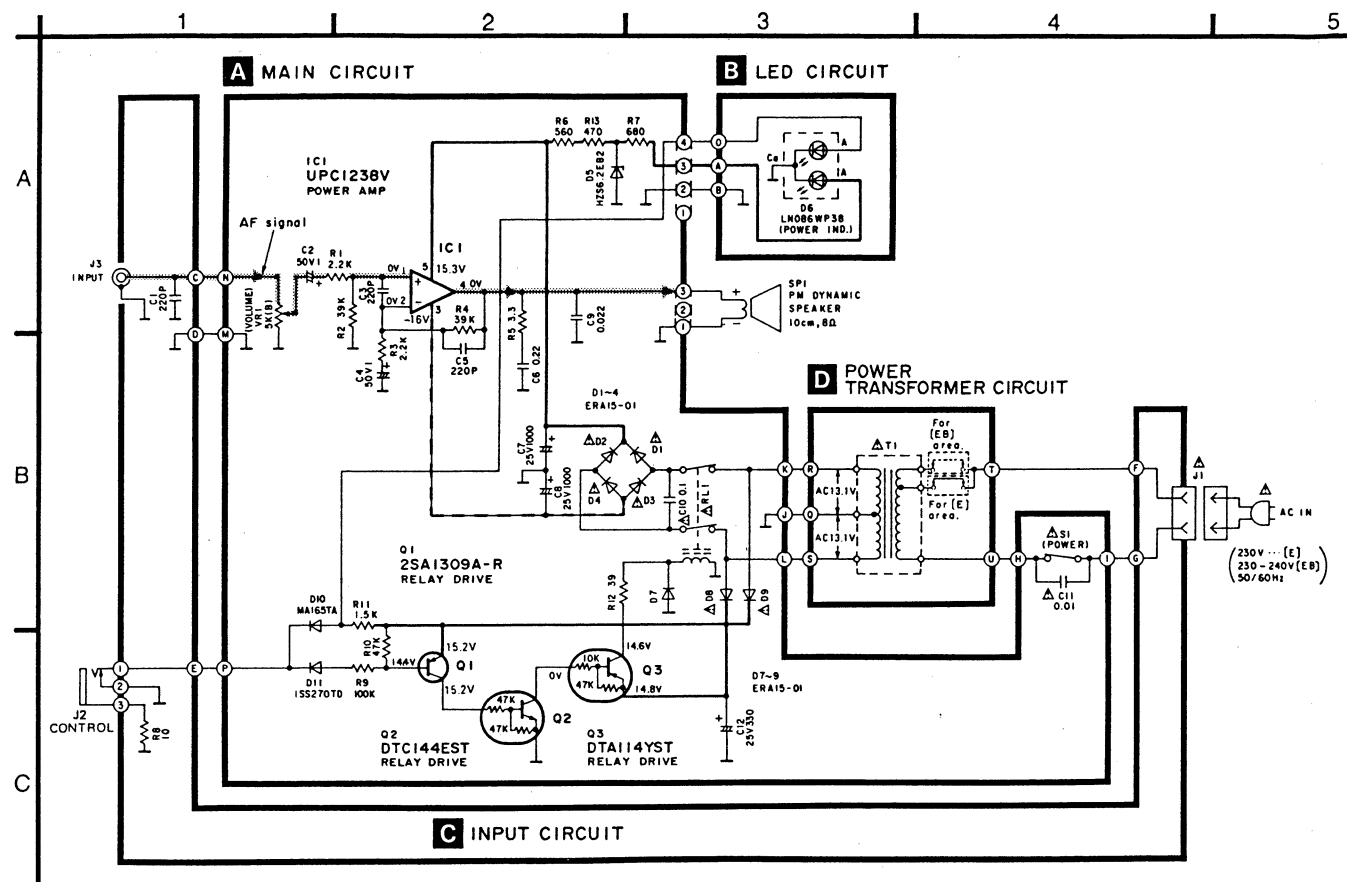


PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

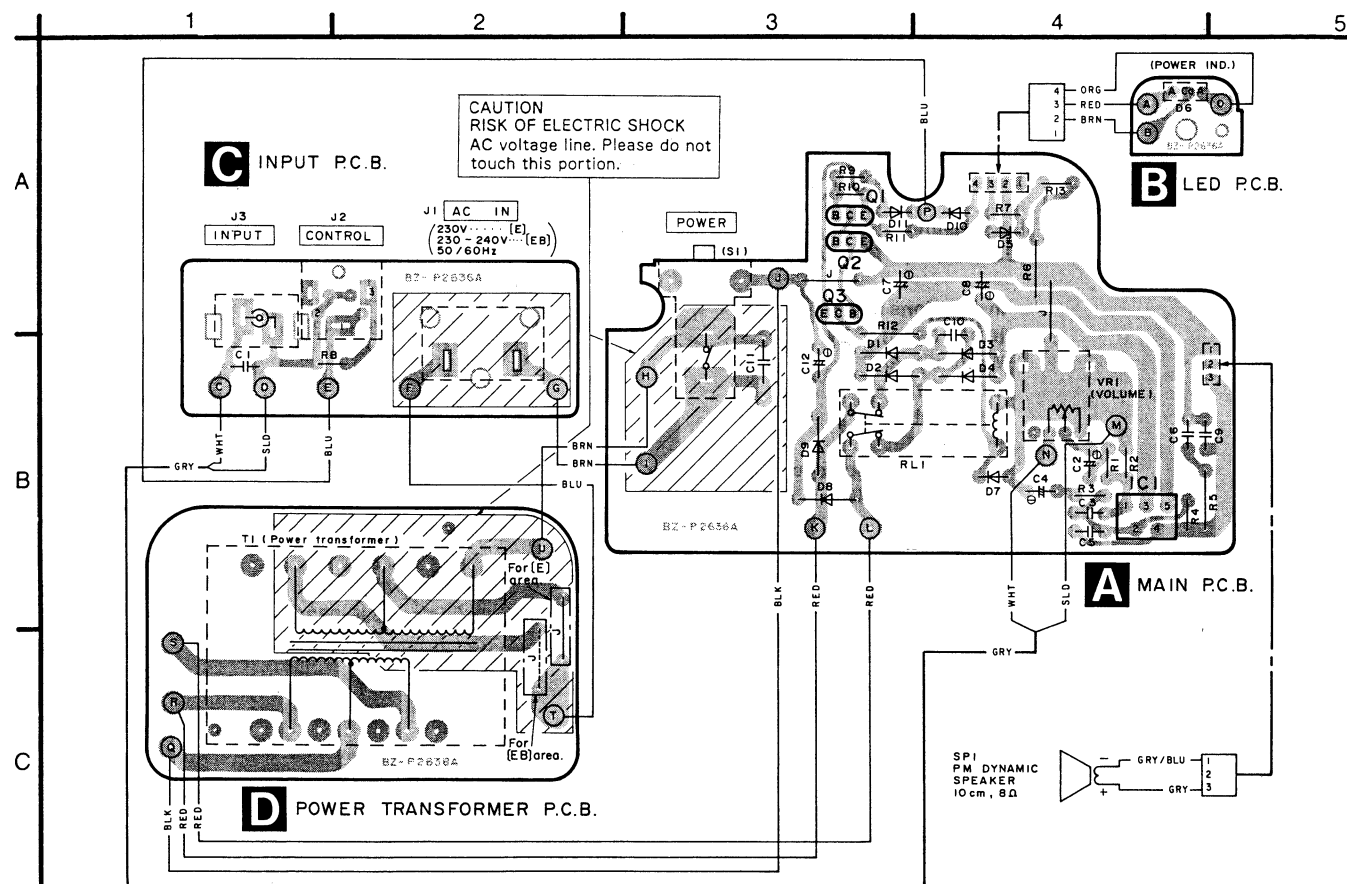


Ref. No. 4	Removal of the amp ass'y	Ref. No. 5	Removal of the power transformer
Procedure 1→2→4	1. Remove the 2 connectors (3pin, 4pin). 2. Remove the 6 screws (1~6).	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 6	Removal of the speaker net ass'y	Ref. No. 7	Removal of the speaker
Procedure 1→2→4→6	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Ref. No. 8
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 7	Removal of the speaker	Ref. No. 8	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 8	Removal of the LED P.C.B.	Ref. No. 9	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 9	Removal of the power transformer	Ref. No. 10	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 10	Removal of the speaker net ass'y	Ref. No. 11	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 11	Removal of the speaker	Ref. No. 12	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 12	Removal of the LED P.C.B.	Ref. No. 13	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 13	Removal of the power transformer	Ref. No. 14	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 14	Removal of the speaker net ass'y	Ref. No. 15	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 15	Removal of the speaker	Ref. No. 16	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 16	Removal of the LED P.C.B.	Ref. No. 17	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 17	Removal of the power transformer	Ref. No. 18	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 18	Removal of the speaker net ass'y	Ref. No. 19	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 19	Removal of the speaker	Ref. No. 20	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 20	Removal of the LED P.C.B.	Ref. No. 21	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 21	Removal of the power transformer	Ref. No. 22	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 22	Removal of the speaker net ass'y	Ref. No. 23	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 23	Removal of the speaker	Ref. No. 24	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 24	Removal of the LED P.C.B.	Ref. No. 25	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 25	Removal of the power transformer	Ref. No. 26	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 26	Removal of the speaker net ass'y	Ref. No. 27	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 27	Removal of the speaker	Ref. No. 28	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 28	Removal of the LED P.C.B.	Ref. No. 29	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 29	Removal of the power transformer	Ref. No. 30	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 30	Removal of the speaker net ass'y	Ref. No. 31	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 31	Removal of the speaker	Ref. No. 32	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 32	Removal of the LED P.C.B.	Ref. No. 33	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 33	Removal of the power transformer	Ref. No. 34	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 34	Removal of the speaker net ass'y	Ref. No. 35	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 35	Removal of the speaker	Ref. No. 36	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 36	Removal of the LED P.C.B.	Ref. No. 37	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the 2 screws (1, 2).
Ref. No. 37	Removal of the power transformer	Ref. No. 38	Removal of the speaker net ass'y
Procedure 1→2→4→6→7	Remove the 2 screws (1, 2).	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.
Ref. No. 38	Removal of the speaker net ass'y	Ref. No. 39	Removal of the speaker
Procedure 1→2→4→6→7	1. Remove the 4 screws (1~4). 2. Remove the speaker net ass'y in the direction of arrow by using a regular screwdriver or similar object as shown above. 3. Pull out the speaker terminals.	Remove the 4 screws (1~4).	Remove the 4 screws (1~4).
Ref. No. 39	Removal of the speaker	Ref. No. 40	Removal of the LED P.C.B.
Procedure 1→2→4→6→7	Remove the 4 screws (1~4).	Remove the screw (1).	Remove the screw (1).
Ref. No. 40	Removal of the LED P.C.B.	Ref. No. 41	Removal of the power transformer
Procedure 1→2→4→6→7	Remove the screw (1).	Remove the 2 screws (1, 2).	Remove the

SCHEMATIC DIAGRAM



PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



Notes:

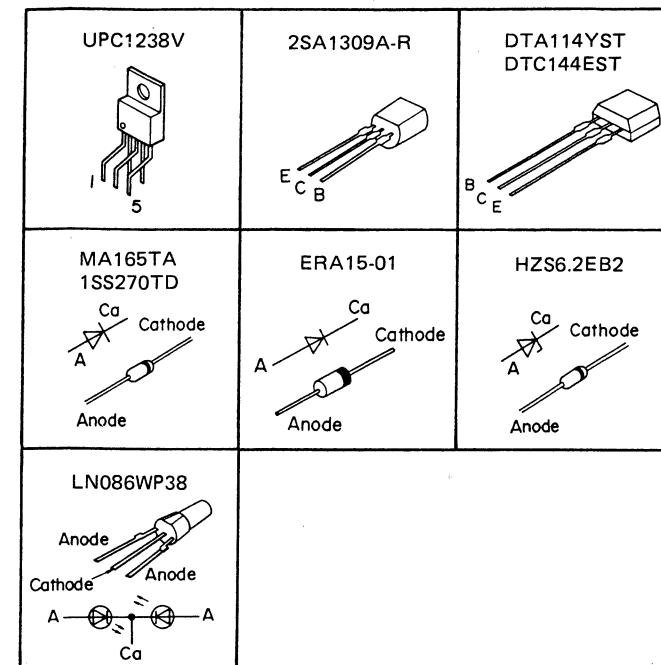
- S1 : Power switch
- ⬢ : AF signal lines
- : Positive voltage lines
- - - : Negative voltage lines

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- This schematic diagram and printed circuit boards may be modified at any time with the development of new technology.

*Caution!

- IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
- *Cover the parts boxes made of plastics with aluminum foil.
- *Ground the soldering iron.
- *Put a conductive mat on the work table.
- *Do not touch the legs of IC or LSI with the fingers directly.

● Terminal guide of IC, transistors and diodes.



REPLACEMENT PARTS LIST

- Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R8	ERDS2TJ100	1/4W 10	C2	ECEA1HU010	50V 1U
			R9	ERDS2TJ104	1/4W 100K	C3	ECBT1H221KB5	50V 220P
			R10	ERDS2TJ473	1/4W 47K	C4	ECEA1HU010	50V 1U
R1	ERDS2TJ222	1/4W 2.2K	R11	ERDS2TJ152	1/4W 1.5K	C5	ECBT1H221KB5	50V 220P
R2	ERDS2TJ393	1/4W 39K	R12	ERDS2TJ390	1/2W 39	C6	ECQM1H224JZ	50V 0.22U
R3	ERDS2TJ222	1/4W 2.2K	R13	ERDS2TJ471	1/4W 470	C7, 8	ECEA1EU102E	25V 1000U
R4	ERDS2TJ393	1/4W 39K				C9	ECBT1E223ZF	25V 0.022U
R5	ERDS1TJ3R3B	1/2W 3.3			CAPACITORS	C10	ECQE1104KF3	100V 0.1U Δ
R6	ERDS2TJ561	1/4W 560				C11	ECKDNS103ZV	400V 0.01U Δ
R7	ERDS2TJ681	1/4W 680	C1	ECBT1H221KB5	50V 220P	C12	ECEA1EU331E	25V 330U

Notes : * Important safety notice:

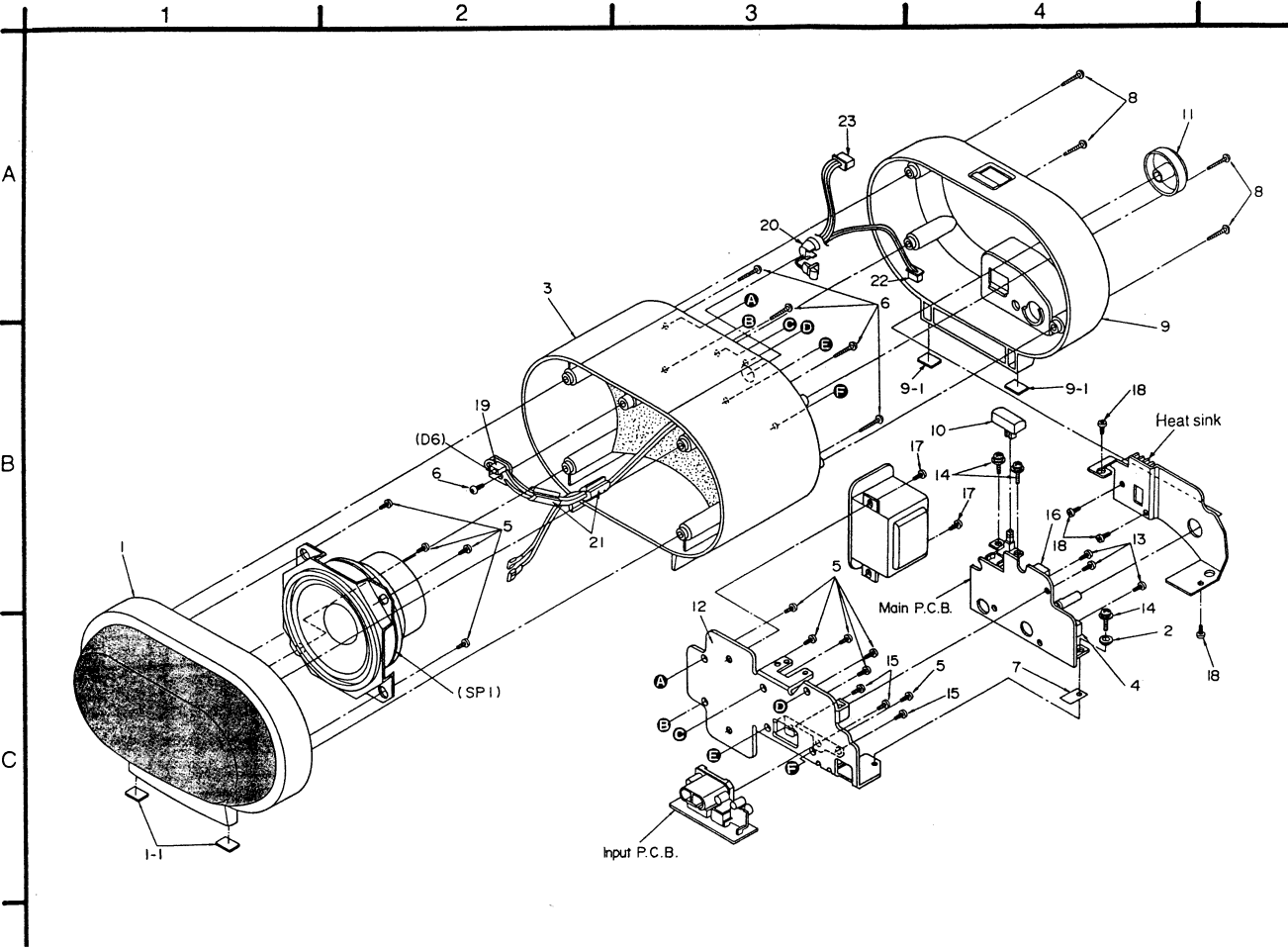
- Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
- * The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)				DIODE(S)	
IC1	UPC1238V	I. C. POWER		D1-4	ERA15-01	DIODE	Δ
		TRANSISTOR(S)		D5	HZS6.2EB2	DIODE	
				D6	LN086WP38	L. E. D.	
Q1	2SA1309A-R	TRANSISTOR		D7	ERA15-01	DIODE	
Q2	DTC144EST	TRANSISTOR		D8, 9	ERA15-01	DIODE	Δ
Q3	DTA114YST	TRANSISTOR		D10	MA165	DIODE	
				D11	1SS270TD	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTOR(S)	
VR1	EVJ02BF03B54	V. R. VOLUME	
		TRANSFORMER(S)	
T1	ETP48SFB72UN	POWER TRANSFORMER	△
		SPEAKER(S)	
SP1	EAS10P464D	SPEAKER	
		SWITCH(ES)	
S1	ESB8249V	SW. POWER	△
		JACK(S)	
J1	SJS9236	AC INLET	△
J2	RJJD7S2YA-C	M3 JACK (CONTROL)	
J3	109532	JACK (INPUT)	
		RELAY(IES)	
RL1	AJW5211	RELAY	△

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RFKNBAV30E	SPEAKER NET ASS' Y	
1-1	SHG1654	FOOT	
2	SB-24	SPACER	
3	RFKKBAV30E	CABINET ASS' Y	(E)
3	RFKKBAV30EB	CABINET ASS' Y	(EB)
4	BZ-Z2140B	CONNECTOR (3P)	
5	XTN4+12B	SCREW	
6	XTB3+16B	SCREW	
7	S-18	PLATE	
8	XTB3+16BFZ	SCREW	
9	RFKNBAV30E	REAR COVER ASS' Y	
9-1	SHG1654	FOOT	
10	BZ-Z2453A	BUTTON, POWER	
11	RGW0042-K	KNOB, VOLUME	
12	BZ-Z2450B	CHASSIS	
13	XTB3+6J	SCREW	
14	XYN3+F8	SCREW	
15	XTB3+10J	SCREW	
16	BZ-Z2140C	CONNECTOR (4P)	
17	XSB3+6F	SCREW	
18	XTN3+6B	SCREW	
19	BZ-Z2650A	SPACER, LED (D6)	
20	BZ-G1651A	BUSHING	
21	BZ-N2487A	CUSHION OF CORDS	
22	BZ-C2448B	CONNECTOR ASS' Y (3P), SP CORD	
23	BZ-C2151A	CONNECTOR ASS' Y (4P), LED (D6)	
		PACKING MATERIALS	
P1	BPC-1084C	CARTON BOX	
P2	BJP-931A	PAD (A)	
P3	BJP-932A	PAD (B)	
P4	BZ-Z2469A	PROTECTION COVER (UNIT)	
P5	XZB15X25A10	PROTECTION COVER	
		ACCESSORIES	
A1	BDS-1084D	INSTRUCTION MANUAL	
A2	RQA0013	WARRANTY CARD	
A3	RQCB0169	SERVICENTOR LIST	
A4	RJA0019-1K	AC POWER SUPPLY CORD	(E) △
A4	SJA193	AC POWER SUPPLY CORD	(EB) △
A5	BZ-C2457A	MONOURAL CONNECTION CABLE	
A6	BZ-C2458A	L-TYPE CABLE (M3)	

CABINET PARTS LOCATION



PACKAGING

